

## INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

02560045PA

Application Number

10/714,929

Applicant(s)

T. Rappaport

Filing Date

11-18-03

Group Art Unit

unknown

2612

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/TM/	1	4,675,147	6-23-87	Schaefer et al.			4-6-83
	2	4,736,453	4-5-88	Schloemer			12-10-85
	3	4,885,694	12-5-89	Pray et al.			4-29-87
	4	5,111,392	5-5-92	Malin			6-9-89
	5	5,119,307	6-2-92	Blaha et al.			12-22-89
	6	5,239,487	8-24-93	Horejsi et al.			10-24-90
	7	5,293,640	3-8-94	Gunmar et al.			
	8	5,307,261	4-26-94	Maki et al.			6-28-91
	9	5,337,149	8-9-94	Kozah et al.			11-12-92
	10	5,339,184	8-16-94	Tang			6-15-92
	11	5,375,123	12-20-94	Andersson et al.			2-5-93

## FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

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EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/TM/	12	5,394,522	2-28-95	Sanchez-Frank et al.			9-13-93
	13	5,450,615	9-12-95	Fortune et al.			12-22-93
	14	5,458,123	10-17-95	Unger			4-29-94
	15	5,465,390	11-7-95	Cohen			2-12-93
	16	5,482,050	1-9-96	Smokoff et al.			2-17-94
	17	5,485,568	1-16-96	Venable et al.			10-8-93
	18	5,491,644	2-13-96	Pickering et al.			9-7-93
	19	5,491,837	2-13-96	Haartsen			3-7-94
	20	5,493,679	2-20-96	Virgil et al.			10-29-93
	21	5,515,269	5-7-96	Willis et al.			11-8-93
	22	5,528,518	6-18-96	Bradshaw et al.			10-25-94

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/TM/	23	5,539,665	7-23-96	Lamming et al.			7-25-94
	24	5,553,312	9-3-96	Gathey et al.			6-20-94
	25	5,553,620	9-10-96	Snider et al.			5-2-95
	26	5,555,354	9-10-96	Strasnick et al.			3-23-93
	27	5,561,841	10-1-96	Markus			
	28	5,564,070	10-8-96	Want et al.			7-30-93
	29	5,594,946	1-14-97	Menich et al.			2-28-95
	30	5,598,532	1-28-97	Liron			10-21-93
	31	5,625,827	4-29-97	Krause et al.			12-23-94
	32	5,636,344	6-3-97	Lewis			8-22-91
	33	5,689,355	11-18-97	Okubo et al.			7-1-96

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/TM/	34	5,761,093	6-2-98	Urbish et al.			5-8-97
	35	5,794,128	8-11-98	Brockel et al.			9-20-95
	36	5,799,154	8-25-98	Kuriyan			6-27-96
	37	5,809,282	8-15-98	Cooper et al			6-7-95
	38	5,815,395	9-29-98	Hart et al.			6-29-95
	39	5,828,960	10-27-98	Tang et al.			3-31-95
	40	5,831,610	11-3-98	Tonelli et al.			2-23-96
	41	5,832,389	11-3-98	Dent			4-3-96
	42	5,861,887	1-19-99	Butler et al.			12-5-95
	43	5,867,112	2-2-99	Kost			5-14-91
V	44	5,877,777	3-2-99	Colwell			4-7-97

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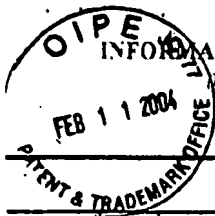

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/TM/	45	5,878,328	3-2-99	Chawla et al.			12-21-95
	46	5,907,850	5-25-99	Krause et al.			1-21-97
	47	5,917,808	6-29-99	Kosbab			1-17-97
	48	5,923,850	7-13-99	Barroux			6-28-96
	49	5,926,762	7-20-99	Arpee et al.			5-17-96
	50	5,940,196	8-17-99	Piehler et al.			5-16-97
	51	5,945,976	8-31-99	Iwamura et al.			12-10-96
	52	5,948,055	9-7-99	Pulsipher et al.			8-29-96
	53	5,949,335	9-7-99	Maynard			4-14-98
	54	5,949,988	9-7-99	Feisullin et al.			4-3-97
↓	55	5,953,669	9-14-99	Stratis et al.			12-11-97

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/TM/	56	5,963,867	10-5-99	Reynolds et al.			8-16-95
	57	5,970,406	10-19-99	Komara			12-31-96
	58	5,987,328	11-16-99	Ephremides et al.			4-24-97
	59	6,006,021	12-21-99	Tognazzini			7-1-96
	60	6,018,625	1-25-00	Hayball et al.			8-27-97
	61	6,021,316	2-1-00	Heiska et al.			
	62	6,032,105	2-29-00	Lec et al.			7-31-97
	63	6,038,547	3-14-00	Casto			1-7-98
	64	6,044,273	3-28-00	Tekinay			12-10-96
	65	6,058,102	5-2-00	Drysdale et al.			11-6-98
	66	6,058,262	5-2-00	Kawas et al.			4-18-97

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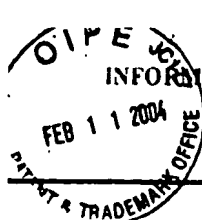

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	68	6,061,722	5-9-00	Lipa et al.			12-23-96
	69	6,075,541	6-13-00	Maclinovsky			11-7-97
	70	6,088,522	7-11-00	Lee et al.			7-31-97
	71	6,104,699	8-15-00	Holender et al.			
	72	6,108,309	8-22-00	Cohoe et al.			12-8-97
	73	6,111,857	8-29-00	Soliman et al.			9-11-97
	74	6,122,083	9-19-00	Ohta et al.			10-3-94
	75	6,148,010	11-14-00	Sutton et al.			6-24-98
	76	6,199,032	3-6-01	Anderson			7-22-98
	77	6,204,813	3-20-01	Wadell et al.			2-20-98

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Applicant(s)	T. Rappaport.
Filing Date	11-18-03
Group Art Unit	<del>undisclosed</del> 2612

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EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/TM/	78	6,208,833	3-27-01	Preschutti et al.			6-24-97
	79	6,229,540	5-8-01	Tonelli et al.			10-13-98
	80	6,253,086	6-26-01	Parantainen et al.			3-25-99
	81	6,285,377	9-4-01	Greenbaum et al.			6-26-97
	82	6,289,203	9-11-01	Smith et al.			2-25-98
	83	6,317,599	11-13-01	Rappaport et al.			5-26-99
	84	6,326,987	12-4-01	Alexander			12-19-00
	85	6,330,005	12-11-01	Tonelli et al.			10-6-99
	86	6,311,144	10-30-01	Abu El Ata			7-31-98
	87	6,337,688	1-8-02	Berstis			1-29-99
	88	6,338,031	1-8-02	Lee et al.			9-23-99

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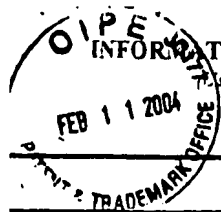
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Group Art Unit

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TM/	89	6,356,758	3-12-02	Almeida et al.			12-31-97
	90	6,393,432	5-21-02	Flansburg et al.			6-2-99
	91	6,408,312	6-18-02	Forthman et al.			8-30-99
	92	6,442,507	8-27-02	Skidmore et al.			12-29-98
	93	6,470,195	10-22-02	Meyer			10-31-00
	94	6,487,417	11-26-02	Rossoni et al.			11-24-99
	95	6,493,679	12-10-02	Rappaport et al.			5-26-99
	96	6,496,290	12-17-02	Lee			12-17-98
	97	6,499,006	12-24-02	Rappaport et al.			7-14-99
	98	6,505,045	1-7-03	Hills et al.			4-10-00
✓	99	5,586,254	12-17-96	Kondo			

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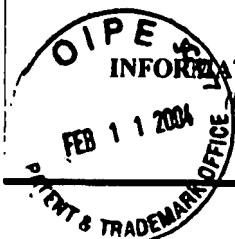

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Applicant(s) <b>T. Rappaport et al.</b>	
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/TM/	100	6,085,335	7-4-00	Djoko et al.			12-31-97
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	102	5,821,937	10-13-98	Tonelli et al.			8-12-96
	103	5,774,669	6-30-98	George et al.			7-28-95
	104	5,802,146	9-1-98	Dulman			11-22-95
	105	5,825,759	10-20-98	Liu			7-24-95
	106	5,845,124	12-1-98	Bernan			5-1-96
	107	6,199,032	3-6-01	Anderson			7-22-98
	108	5,467,441	11-14-95	Stone et al.			10-6-94
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V	110	5,994,984	11-30-99	Stancil et al.			5-29-98

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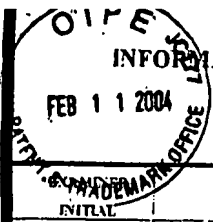
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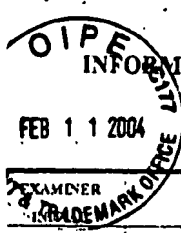
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Applicant(s) T. Rappaport;	
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T. Rappaport;

Filing Date

11-18-03

Group Art Unit

Unknown 2612

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/Thomas Mullen/

DATE CONSIDERED

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# INFORMATION DISCLOSURE CITATION

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FEB 11 2004

02560045PA

Applicant Number

10/714,929

Applicant(s)

Rappaport et al.

Filing Date

11-18-03

Group Art Unit

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2612

EXAMINER  
INITIAL

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

DATE

/TM/

Company Web Page "Actix" www.actix.com product name: E-NOS (now E-AMS)

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unknown

Company Web Page "Agilent" www.agilent.com product name: OPAS32

Company Web Page "Agilent" www.agilent.com product name: Wizard

Company Web Page "Comarco" www.edx.com product name: SignalPro

Company Web Page "ComOpt" www.comopt.com product name: CellOpt AFP

Company Web Page "Lucent" www.bell-labs.com product name: WiSE

Company Web Page "Ericsson" www.ericsson.com product name: TEMS Lite

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Company Web Page "Marconi" www.marconi.com product name: PLANET

Company Web Page "Marconi" www.marconi.com product name: decibelPlanner

Company Web Page "Schema" www.schema.com product name: Optimizer

Company Web Page "ScoreBoard" www.scoreboard.com product name: ScoreBoard

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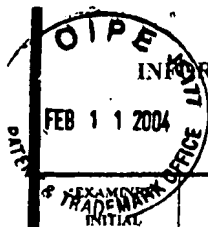
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SHEET 15 of 18



## INFORMATION DISCLOSURE CITATION

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Docket Number (Optional)

02560045PA

Application Number

10/714,929

Applicant(s)

T. Rappaport et al.

Filing Date

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/TM/

Article submitted to IEEE transactions on Wireless Communications, August 2002 titled: " Globally Optimal Transmitter Placement for Indoor Wireless Communication Systems" J. He; A. Verstak; L.T. Watson; C.A. Stinson; N. Ramakrishnan; C.A. Shaffer; T.S. Rappaport; C.R. Anderson; K. Bae; J. Jiang; and W.H. Tranter

/TM/

Article submitted to IEEE Transactions on Wireless Communications, August 2002, titled: " In-Building Wideband Multipath Measurements at 2.5 GHz and 60 GHz" C. Anderson; T. and T. Rappaport

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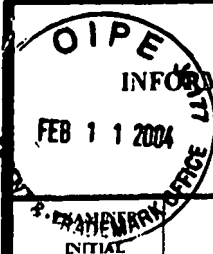
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Rappaport et al.

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2612

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INITIAL		Software by Andrew, titled "RF Planner" dated 6-17-97
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	2	A user guide titled: "Andrew Microwave System Planner", date unknown.
	3	A user guide titled: "Andrew Antenna System Planner", date unknown.
	4	Article "Building Database Manipulator" Copyright, January 1998; MPRG and Virginia Tech
	5	PCS 97 Track 7; Engineering & Systems Management; T. Rappaport, date unknown.
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	8	Intel Technology Journal, vol. 7, issue 3, August 2003:
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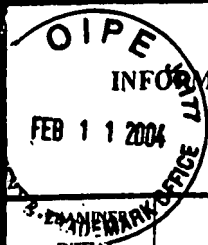
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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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13

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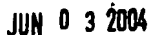
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**Appln. No. 10/714,929**

Filed: 11/28/03

Inventor(s): Rappaport, et al.

Art Unit: ~~2123~~ 2612

Examiner: ~~unknown~~ *Mullen*

Atty. Ref: 02560045PA

Sheet 1 of 2

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Appln. No. 10/714,929

Filed: 11/18/03

Inventor(s): Rappaport, et al.

Art Unit: ~~2123~~ 2612Examiner: ~~unknown~~ mullen

Atty. Ref: 02560045PA

Sheet 2 of 2

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/TM/	5	R.R. SKIDMORE ET AL, "Towards Integrated PSEs for Wireless Communications: Experiences with the S4W and SitePlanner Projects," MPRG-TR-95-08, Virginia Tech, July 1995.	
/TM/	6	J. HE, T.S. RAPPAPORT ET AL, "Global Optimization of Transmitter Placement in Wireless Communication Systems," WNCG-TR-10-07, U. Texas, October 2003.	
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/Thomas Mullen/

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sheet 1 of 5

Application Number 10714929

Filing Date 2003-11-18

First Named Inventor RAPPAPORT

Art Unit ~~2422~~ 2612

Examiner Name Mullen

Attorney Docket Number WV00045P01

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2 of 5

Application Number		10714929
Filing Date		2003-11-18
First Named Inventor	RAPPAPORT	
Art Unit	<del>2429</del> 2612	
Examiner Name	Mullen	
Attorney Docket Number	WV00045P01	

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	5	S. SHAKKOTTAL AND T.S. RAPPAPORT, "RESEARCH CHALLENGES IN WIRELESS NETWORKS: A TECHNICAL OVERVIEW", PROCEEDING OF FIFTH INTERNATIONAL SYMPOSIUM ON WIRELESS PERSONAL MULTIMEDIA COMMUNICATIONS, HONOLULU, HI, OCTOBER 2002	<input type="checkbox"/>
	6	<del>R. SKIDMORE</del> R. SKIDMORE, ET AL., "A COMPREHENSIVE IN-BUILDING AND MICROCELLULAR WIRELESS COMMUNICATION SYSTEM DESIGN TOOL", THE BRADLEY DEPARTMENT OF ELECTRICAL ENGINEERING, MPRG-TR-97-13, JUNE 1997, MASTER'S THESIS - UNPUBLISHED BY VIRGINIA TECH FOR 2 YEARS AFTER SUBMISSION	<input type="checkbox"/>
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	9	R. SKIDMORE, ET AL., "INTERACTIVE COVERAGE REGION AND SYSTEM DESIGN SIMULATION FOR WIRELESS COMMUNICATION SYSTEMS IN MULTI-FLOORED INDOOR ENVIRONMENTS: SMT PLUS im, IEEE ICUPC PROCEEDINGS, 1996	<input type="checkbox"/>
	10	SKIDMORE, ET AL., "TOWARDS INTEGRATED PSEs FOR WIRELESS COMMUNICATIONS: EXPERIENCES WITH THE S4W AND SITEPLANNER PROJECTS", MOBILE COMPUTING AND COMMUNICATIONS REVIEW, VOLUME 1, NUMBER 2, date unknown.	<input type="checkbox"/>
↓	11	T.S. RAPPAPORT, ET AL., "RADIO PROPAGATION PREDICTION TECHNIQUES AND COMPUTER-AIDED CHANNEL MODELING FOR EMBEDDED WIRELESS MICROSYSTEMS", MPRG TECH. REPORT MPRG-TR-95-08, VIRGINIA TECH, JULY <del>95</del> 1995.	<input type="checkbox"/>

**INFORMATION DISCLOSURE  
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3 of 5

Application Number		10714929
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First Named Inventor	RAPPAPORT	
Art Unit	<del>2429</del> 2612	
Examiner Name	Mullen	
Attorney Docket Number	WV00045P01	

/TM/	12	COMPANY WEB PAGE "ERICSSON" WWW.ERICSSON.COM, PRODUCT NAME:TEMS, <i>date unknown.</i>	<input type="checkbox"/>
	13	T. RAPPAPORT, PCS 97 TRACK 7, ENGINEERING & SYSTEMS MANAGEMENT, <i>date unknown.</i>	<input type="checkbox"/>
	14	PROPAGATOR; VOL. 8, NO. 3, FALL <i>1997,</i>	<input type="checkbox"/>
	15	R. SKIDMORE & T. RAPPAPORT; SMT PLUS 1.0 USER'S MANUAL; COPYRIGHT, AUGUST 1996, VIRGINIA TECH	<input type="checkbox"/>
	16	INTEL TECHNOLOGY JOURNAL, VOL. 7, ISSUE 3, AUGUST 2003	<input type="checkbox"/>
	17	IT WIRELESS WEB ARTICLE, NOVEMBER 2003	<input type="checkbox"/>
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4 of 5

Application Number		10714929
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First Named Inventor	RAPPAPORT	
Art Unit	<del>2423</del> 2612	
Examiner Name	Mullen	
Attorney Docket Number	WV00045P01	

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	24	ARTICLE FROM THE TRAPEZ <sup>E</sup> <sub>A</sub> NETWORKS INFORMATION WEBSITE, <i>date unknown.</i>	<input type="checkbox"/>
	25	BRIAN JENKINS, "AIRFLOW TECHNOLOGY-SOLVING THE WLAN DILEMMA", AIRFLOW NETWORKS INFORMATION WEBSITE, JULY 2003	<input type="checkbox"/>
	26	DR. HARRY BIMS, "SECURING ENTERPRISE WLANS", AUGUST 2003	<input type="checkbox"/>
	27	DR. HARRY BIMS, "ENABLING VOICE-OVER WLANS", SEPTEMBER 2003	<input type="checkbox"/>
	28	BRIAN JENKINS, "HIGH AVAILABILITY FOR MISSION-CRITICAL WLANS", SEPTEMBER 2003, AIRFLOW APPLICATIONS GUIDE	<input type="checkbox"/>
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	30	ARTICLE FROM COMPUTERWORLD INFORMATION WEBSITE, <i>date unknown.</i>	<input type="checkbox"/>
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↓	33	R.K. MORROW, T.S. RAPPAPORT, "GETTING IN", WIRELESS REVIEW MAGAINE, MARCH 2000	<input type="checkbox"/>



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5 of 5

Application Number	10714929
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Art Unit	<del>2429</del> 2612
Examiner Name	Mullen
Attorney Docket Number	WV00045P01

/TM/	34	R.K. MORROW, JR., "SITE-SPECIFIC INDOOR PLANNING", APPLIED MICROWAVE AND WIRELESS MAGAZINE, MARCH 1999	<input type="checkbox"/>
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